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## DESCRIPTIONS OF NEW SPECIES OF LEPIDOPTERA.

BY HERMAN STRECKER.

*Papilio Nezahualcoyotl*.

♂ expands 3 to  $3\frac{1}{2}$  inches. Head and body of same color, and marked as in the ordinary *Philenor*; all the wings broader, and not nearly as elongate as in that species, and the secondaries without tails.

Upper surface. Primaries blackish brown, with a dark blue shimmer towards the inner angle; a submarginal transverse row of five white spots, the first which is between the discoidal nervules is much the smallest, the next three are of nearly uniform size, and the last one, between the last median nervule and the submedian nervure, is geminate. Fringe near the apex black, from thence to the lower discoidal nervule black and white alternately, and from the latter to inner angle white, with black only at the termination of the veins.

Secondaries dark shining blue, with a submarginal row of six large white more or less lunate spots, the one at anal angle narrow, and much the smallest. Fringe of marginal indentations white; at termination of veins bluish black.

Under surface. Primaries paler than above, markings the same.

Secondaries after the manner of *Philenor*, but the brown of basal half extending over greater area; the continuous submarginal band of large spots of a deeper orange, more inclined to a red or brick-color.

From New Mexico, close to the Mexican border.

This insect bears about the same relation to the true *Philenor* that *Hospiton* does to *Machaon*, or *Anticostiensis* to *Asterius*, though in neither of the latter is there that almost total obsolescence of the wing-tails that so remarkably distinguishes the present form. It would be curious to know by what process nature has effected this abortion of the caudal appendages, and why it should occur in an exceedingly limited extent of territory.

All the examples of *Philenor* which I have seen from California have short tails to the wings, not much over half the length of eastern examples, and often much less; in the Cali-

fornian examples the wings are also broader than in the eastern ones, but there is not that wide aberrancy that marks in a moment the above-described New Mexican form.

The largest examples of *Philenor* that I have seen were from Ohio, Pennsylvania and New York, whilst the smallest were from Georgia, and especially Florida, where, to the contrary, another of our species, the well-known *Turnus*, is found of large and frequently enormous size. The Californian examples of *Philenor* are small, or, at most, only of medium size.

**Papilio Cleombrotus.**

Expands  $3\frac{1}{4}$  inches. Head and body black; on head are two obscure yellowish spots, two more on the collar, and one on each shoulder. Abdomen with yellow lateral stripes.

Primaries narrow.

Upper surface black, with greenish blue sheen on basal third; a large yellow central spot, partly within the median cell, and partly outside the median nervure. Fringes on upper half outer margin black, on inner half black and white.

Secondaries rounded outwardly, outer margin dentated. Deep shining greenish blue, except along the costa, where the blue shades into or is replaced by black; a row of small white submarginal lunules; dentations narrowly fringed with white.

Under surface. Primaries uniform dark chestnut-brown, with the yellow central spot of upper side repeated.

Secondaries same brown as primaries, with the same small white submarginal lunules of upper surface; above each of these latter is a crimson more or less lunate spot, the one near the anal angle very much larger than the others; at the base of wing three crimson spots placed one at shoulder, one within base of discoidal cell, and one between the median vein and inner margin; this latter is the largest, and is sagittate in shape.

From the condition of the abdomen I am unable to decide as to the sex of the single example on which the above description was based.

*Hab.*—Amaz. Sup.

This insect is closely allied to *Pausanias* Hew., but differs decidedly from it in the following particulars: In the entire absence of the large pale semitransparent apical patch, and in the fringe of inner half of outer margin being white and black

instead of black only as in its analogue. In the much greater length of secondaries, and in their rounded outer margin, which in *Pausanias* is in a straight line from anal angle to apex. In the secondaries being, except along the costa, entirely blue, whilst in the other species that color is confined to the basal half of wing only.

On the underside in all wings being uniform dark brown, the primaries being devoid of the paler color of outer margin and apical part, as well as of the two or three small yellowish submarginal spots near the inner angle, and in the secondaries being without the alternating pale brown rays which emanate from the submarginal crimson lunules in *Pausanias*, as well as in the absence of the crimson line which in the latter continues from the anal lunule along the median nervure to base.

Both these species imitate in a remarkable manner *Heliconius Clytia*, but the mimicry is more complete in *Pausanias*, owing to its greater length of fore-wing and narrowness of hind-wing.

Of the last-named species I have seen many examples, of the present described only the single type now before me.

**Theorema Titania.**

Expands 2 inches; form of *T. Eumenia*.

Upper surface. Primaries black, disc and base covered with dark shining greenish scales; apex tipped with a paler silvery green, which is cut with white by the veins at and near their termination; a black marginal line succeeded by pure white fringe.

Secondaries black with a slight powdering of shining green atoms; a fairly broad glittering green marginal band extending from apex where it is narrowest to beyond the last median nervule where it attains its greatest width, this band is cut by the veins, which are black, and is separated from the white fringe by a black line; on the inner margin above anal angle is a small white spot. Tail black, fringed with white.

Under surface. All wings black. Primaries narrowly margined with greenish silver, broadest at apex; fringe white. Secondaries with three parallel rows of bluish white or silvery spots; those nearest the margin are crescent-shape, connected with a marginal line of same color; in the next row they are small, and with the exception of one, which is lunate, are round

or oval; those composing the innermost row are smallest, and slightly and somewhat variously lunate. Fringe white.

From one example taken by the late Prof. Gabb in Costa Rica, now in Mus. Strecker.

On the upper side, omitting the tails, this insect bears a close resemblance to the females of *Eumæus Toxea* and *Minyas*.

There is, as far as I am aware of, but one other species of this genus known, *T. Eunomia* Hew.,<sup>1</sup> from New Granada, from which the one here described is entirely distinct.

**Agrias Amydon, Hew. ♀**

Expands  $3\frac{1}{4}$  inches. Head black with four minute white spots above; palpi yellowish white. Body above deep ochraceous orange, below black with pale spots and marks. Wings, primaries broader than in the male; exterior margin straight until near inner and outer angles, where it is rounded.

Upper surface. Primaries, basal half, or rather more, bright ochraceous, deepening in tint towards the base; the outer part of wing black; this latter color starts at the inner angle and extends across in an arched line to within the middle of costa, forming a large triangular patch, which covers the outer part of the wing; a dash or an abbreviated band of black extends from inner angle along inner margin to over half its length; a band of three whitish yellow spots cross the black color towards the apex.

Secondaries, black with a small patch of deep ochraceous near the base, and a whitish edging at the apex.

Under side of all wings colored and marked as in the male, with the exception of the ground-color of primaries, which is ochre yellow instead of red.

Described from a single example which came to me in a lot of several thousand butterflies, taken at or near Pebas, on the Peruvian Amazon.

On the upper side this insect is the exact counterpart on a gigantic scale, of *Catagramma Sinamara* Hew., and (if my example, received from Mr. Hewitson be that species) of *C. Amazona* Bates, which is doubtless the ♀ of *C. cynosura* Hew., and further between which and the figure of *C. Sinamara* I can see no difference.

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<sup>1</sup> Hew. Ill. Diur. Lep., p. 69, t. 27, figs. 1, 2 (1865).

As far as they are known the females of the red species of *Agrias* mimic in an extraordinary manner the females of certain *Catagrammas*, and the blue ones the same sex in some of the species of *Callithea*.

***Plusia corusca*.**

Size and shape of *Mortuorum* Guen. Head and body pale brown, inclining to ochrey beneath.

Upper surface. Primaries, ground color brownish pink; sinuate white or silvery basal and transverse anterior lines edged irregularly with deep bronzy brown; a transverse posterior line, this latter is broken, irregular, of exceeding fineness, and edged at intervals with deep brown; the space between this line or band and the transverse anterior line, and between the median nervure and inner margin is a deep golden or coppery bronze, according to the light in which it is seen, the same shade occupies most of the space between the submarginal, which is pink and sinuate, and the transverse posterior line, and also covers, except at inner angle, the space between the former and the exterior margin; a large and very distinct gamma mark as in *P. gamma* L.

Secondaries brownish, pale and ochraceous at basal half, and smoky on outer half.

*Hab.*—Colorado. One example, Mus. Strecker.

Though in detail the markings are somewhat different, still this insect forcibly reminds one of *P. mortuorum*, were the silver ground of the latter to be replaced by coppery bronze the resemblance would be very strong.

***Plusia alterna*.**

Expands  $1\frac{3}{4}$  inches. Allied to *Ampla* Wlk., but entirely distinct, all wings narrower than in that species, and primaries not as much produced at inner angle. Head and thorax light ashen or purplish gray; patagiæ with broad, dark brown margin, which color forms a continuous band across the back. Abdomen light brown.

Primaries of an even, shining pale, somewhat purplish gray, and without the shading and clouding of outer half as in *Ampla*; a large dark space interior to the median nervure, and between the transverse anterior and posterior lines, this space is a dark rich brown, shading into black at upper part where it is outlined by a

strong, well-defined silver mark, straight nearest to base, hooked outwardly ; this mark is quite different from the nearly straight insignificant mark of *Ampla* ; above the outer edge of the dark central patch, the transverse posterior line is double and inconspicuously continued towards the costa ; the transverse anterior line does not extend beyond the central patch, only at the place where it should terminate on the costa, is a dark spot. A small dark inconspicuous apical spot.

Secondaries orchrey brown, shading into smoky towards outer margin.

*Hab.*—Colorado. One example, Mus. Strecker.